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ABSTRACT

The effects of a 10-weeks program in reading skills instruction or study skills instruction on culturally disadvantaged college freshmen in improving reading and academic performance were studied to identify optimum programs for particular students. Subjects were 60 entering freshmen scoring at or below the 30th percentile on the Iowa Silent Reading Test and 60 control subjects. Three criteria, grade point average (GPA), difference between expected and actual GPA, and a reading test residual gain score, were used to examine several null hypotheses. It was concluded that (1) there was a significant difference between the instructional and control groups on all three variables; (2) according to GPA analysis, achievement favored the rural students; (3) there was no difference in the effectiveness of the two modes of instruction; (4) however, some difference of effectiveness may have been hidden by grouping students of different backgrounds; (5) reading instruction appeared to be more helpful for urban students and study skills for rural; and (6) study skills should follow reading skills for urban students. Tables and references are included. (BM)

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The Effect of Two Different Reading Programs on Culturally Disadvantaged College Freshmen

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The purpose of this study was to compare the effectiveness of study skills and reading skills programs in improving the reading and academic performance of culturally disadvantaged college freshmen. Students identified as disadvantaged for this study were additionally classified as urban or rural for the purpose of analyzing any difference in the effect of the instructional programs on these two groups.

The philosophy that persons should be able to gain the means for success in our culture on the basis of their potential for developing skills, rather than on the basis of a particular socio-economic background, has had considerable impact on all levels of education. Under this philosophy programs funded by governments

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and foundations, as well as institutional pressures, have made it possible for increasing numbers of disadvantaged students of high potential to attend college.

There is ample evidence to indicate that the degree of success a student achieves in college is related to his ability to operate successfully with printed matter - to find it, read it, understand, remember, and reproduce its contents and organization, and to evaluate its contribution to a store of knowledge. Among the students who have difficulty in these areas of reading and studying is a large group identified by other criterion as disadvantaged. Crossland (2) indicates that less than half of the culturally disadvantaged High School graduates are fully capable of handling college curricula. Unfortunately then, many of the students now able to attend college under programs for the disadvantaged, find that they have inadequate tools for success.

Therefore, in exercising the philosophy of equal opportunity in education, colleges have been faced with the appearance of large numbers of students deficient in skills basic to academic success according to methods of instruction used in most college courses. This corollary need has led to a demand for additional special provisions. Brown (1) has said that colleges and universities should not accept minority students unless remedial or other compensatory programs are available. Kendrick (6) estimated that only eight per cent of culturally disadvantaged youth were ready for a college career, and the instruction which did not make some curricular changes and provisions for these students was not really seeking to meet their needs.

The analysis of the disadvantaged learner discloses that he not only may be deficient in particular skills, but also he may be a drastically different type of learner. Reinforcements and skills learned in the inner city struggle or in a condition of rural deprivation may be different from each other and from those reared within the suburban middle class. The role of Reading and the general habit of rummaging among printed matter as a means of survival, are among those differences. Therefore, any analysis of instructional effect and institutional provisions needs to allow for distinction among types of learners. The concern of this Study is to contribute to the attempt to identify optimum programs for particular students.

The obvious question of college reading improvement programs is: "Is it possible for students with high potential but insufficient skills to improve those skills in a reasonable period of time so that they can successfully read course material?" Many studies, such as the one by Tremonti (11) which reported a comprehension increase of 15 to 20 per cent, and a rate increase of 168 per cent, have filled the literature, indicating the effects of such programs. The ultimate question of interest is: "If reading skills can be improved, does that effect academic performance? Is there more to learning, as revealed by grade point index?" Less evidence is available in answer to this question. Hinston (5) and McDonald (8) both report a higher grade point average and a lower drop-out among students as a result of experience in a reading improvement course. Pauk (9) and Foxe (3) both found that a course in study skills improved the grade point averages of students in courses requiring reading. Hafner (4) indicated an improvement of grade point average

in semesters following instruction for students who had taken a reading improvement course.

There is, then, some evidence that reading and study skills courses are useful in improving reading skills and the academic performance of college students. There is considerable less information concerning the effectiveness of these programs for the culturally disadvantaged. Laffey (7) found that a summer program for culturally deprived high school graduates had little effect on improving their comprehension, although rate was somewhat improved. He concluded that such programs would need to start sooner and extend longer to have much effect.

The Study

Since there is some evidence that reading skills and study skills approaches may have different effects for different students in compensatory programs, both types of instruction were included in this study. Three separate criteria were tested. 1. Grade Point average, 2. The difference between an expected and the actual grade point average, and 3. A Reading test residual gain score. A control group was available and included in the study. For each of these three criteria, the null hypotheses were:

1. There is no variance across treatments in the effect on scores by students from different backgrounds.
2. There is no difference between scores of students receiving instruction and scores of a control group receiving no instruction.
3. There is no difference between scores of students receiving reading skills instruction and scores of

students receiving study skills instruction.

4. There is no difference in the performance of urban and rural disadvantaged students within each of the instruction groups.
5. There is no difference between scores of students in the two instructional groups from the same background.

Tuition grants for low income state residents as well as scholarships for disadvantaged students from various government and private agencies had channeled several disadvantaged students to the campus where this experiment was conducted. An NDEA Title III grant was applied for and awarded to provide reading instruction for these students.

Students were selected for this study in the following manner: All entering freshmen were tested on the Iowa Silent Reading Test. All students scoring at or below the 30th percentile and also meeting criterion as disadvantaged were included in the study. A letter indicating opportunity for the fall program was distributed, and the first 60 students responding formed the experimental group. An additional 60 students who sought assistance did receive instruction the following term and were the control group. The 60 experimental students were distributed over 6 class periods. Odd numbered classes were assigned to Reading Skills instruction and even numbered classes to Study Skills instruction. Classes met three times weekly for 10 weeks.

The content of the study skills course included study techniques, taking examinations, organization of text material, reading in subject-matter texts, taking and organizing notes, use of the library and locating materials. The Reading Skills instruction

included word attack skills when necessary, sentence and paragraph comprehension, vocabulary, critical reading, and rate adjustment.

In order to determine the interaction effects of the first hypothesis, the scores for each of the three criteria used in this study were analyzed by using a two-way analysis of variance design. Since the design for this analysis contained unequal and disproportionate cell sizes, the technique of unweighted means was used to carry out the analysis. The requirement of equality of groups on pre-instructional criteria was satisfied by random assignment of students to class periods.

The other four hypotheses are concerned with differences between two groups. Therefore, the t-test of the significance of the difference between group means was used to test each of these hypotheses on all three criterian. The grade points assigned were those reported by the college registrar, on a 0-4 point range. The expected grade point was computed in the student personnel office for each student. This prediction is computed from a student's rank in class at the time of high school graduation and his composite score for the A.C.T. The rank in class is given 65 percent weight and the A.C.T. composite score is given 35 percent weight. The standard error of the predicted grade point average is .51.

Since the post-test in this study was an alternate form of the same test used for selecting subjects, it was necessary to attempt to remove the influence of regression effects on the measurement of improvement. This was done by using the residual gain score technique proposed by Tracy and Rankin. (10)

Dunnett's t-test was applied to determine significance of difference between the main effects of each of the treatment groups

and the control group. The Dunnett statistic has been developed to be used when a control group composes one of the groups in an analysis of variance.

Results of the Study

The first hypothesis states that the effect of either of the experimental treatments would not vary significantly according to the background of the student. It is necessary to test this hypothesis first, since any difference in the main effects (treatments or backgrounds) can be interpreted only if there is no significant interaction. Tables I, II, and III present the group means and the analysis of variance results for each of the criteria.

TABLE I

RESIDUAL GAIN - IOWA SILENT READING TEST

	Group Means				ANOVA		
Residence	Reading skills group	Study skills group	Control group	Total		F	P
Urban	5.44	4.36	-5.43	-1.3	Treatment	4.05	.05
Rural	3.55	8.15	-4.86	1.5	Background	.72	NS
Total	4.13	6.76	-5.15	.11	Interaction	2.16	(.10)

TABLE II

GRADE POINT AVERAGE

	Group Means				ANOVA		
Residence	Reading skills group	Study skills group	Control group	Total		F	P
Urban	2.22	1.66	1.56	1.70	Treatment	7.40	.01
Rural	2.42	2.49	1.79	2.16	Background	9.11	.01
Total	2.36	2.18	1.68	1.97	Interaction	2.27	(.10)

TABLE III

GRADE POINT DIFFERENCE

	Group Means				ANOVA		
Residence	Reading Skills group	Study skills group	Control group	Total		F	P
Urban	.1213	-.1436	-.4681	-.2870	Treatment	6.37	.01
Rural	.2208	.2788	.2450	.0814	Background	3.77	.01
Total	.1899	.1239	-.3516	-.0991	Interaction	.53	NS

The Interaction test comes procariously close but does not reach acceptable levels of significance for any of the three criteria. Therefore, with some reservation, the significance of main effect differences becomes of interest. There seems to be no question according to the analysis of variance of these criteria but that the differences found among the groups is not a chance condition. This is true for all three criteria on the treatment effects and for both grade point scores on the background effect. Explanation

for the failure of the Reading test score to reflect a significant background effect may be closely tied to the proximity of the interaction effect to significance. It may be concluded that differences seen among the treatment effects on all three criteria and the background effects on the two grade point criteria are real differences.

The second hypothesis stated that there would be no differences between scores of students receiving instruction and scores of a control group receiving no instruction. Table IV presents group means and a summary of the analysis of variance results for all three criteria.

TABLE IV

MEANS AND ANALYSIS OF VARIANCE RESULTS FOR TREATMENT EFFECTS

Group Means

	Reading skills group	Study skills group	Control group	F	P
Reading Test	4.13	6.76	-5.15	9.85	.01
GPA	2.36	2.18	1.68	7.40	.001
GPA Difference	.1899	.1239	- .3516	6.37	.01

Table V combines the two treatment effects and compares them with the control group on all three criteria.

TABLE V

RESULTS OF THE t-test FOR SIGNIFICANCE OF DIFFERENCE BETWEEN INSTRUCTIONAL AND CONTROL MEANS FOR THREE CRITERIA

Means

	Experimental group	Control group	t	P
Reading Test	5.47	-4.98	16.13	.001
GPA	2.27	1.68	4.62	.001
GPA Difference	.1564	- .3516	4.42	.001

There seems to be no questions but that students in the two instructional groups scored higher on all three criteria than did students who received no instruction.

The third hypothesis stated that there would be no difference between scores of students receiving Reading Skills instruction and scores of students receiving study skills instruction on all three criteria. Table VI presents a composite result of the test of that hypothesis for the three scores.

TABLE VI

RESULTS OF THE t-test FOR SIGNIFICANCE OF DIFFERENCE BETWEEN READING AND STUDY SKILLS INSTRUCTION

Group Means

Criteria	Reading skills group	Study skills group	t	P
Reading Test	4.1379	6.7666	1.50	NS
GPA	2.3611	2.1863	1.04	NS
GPA Difference	.1899	.1239	.48	NS

These results indicate that there was no read difference between instruction in Reading Skills and instruction in Study Skills in helping students to a significant advantage on any of the three criteria.

The fourth hypothesis stated that there would be no difference in the performance of urban and rural disadvantaged students within the instructional groups on any of the three criteria. Tables 7 and 8 present the results of tests of this hypothesis.

TABLE VII

RESULTS OF THE t-test FOR SIGNIFICANCE OF DIFFERENCE BETWEEN URBAN AND RURAL READING SKILLS STUDENTS

Reading Skills Group Means

	Urban	Rural	t	P
Reading Test	5.44	3.55	.95	NS
GPA	2.22	2.42	1.02	NS
GPA Difference	.1213	.2208	.47	NS

TABLE VIII

RESULTS OF THE t-test FOR SIGNIFICANCE OF DIFFERENCE BETWEEN URBAN AND RURAL STUDY SKILLS STUDENTS

Study Skills Group Means

	Urban	Rural	t	P
Reading	4.36	8.15	1.27	.10
GPA	1.66	2.49	3.30	.01
GPA Difference	- .1436	.2788	1.90	.05

Table VII indicates that this hypothesis must be accepted for the students within the Reading Skills course. Urban and rural students seem to fare equally well there. But Table VIII reveals that the hypothesis must be rejected for students in the Study Skills course. The grades of rural students were significantly higher than grades of urban students, and the difference between the predicted and actual grade points of rural students was significantly greater than the difference for urban students. Reading test gain scores were also greater for the rural students, but this difference fell short of standards of significance.

The appearance of an urban-rural difference in the Study Skills course and no such difference in the Reading Skills course implies some information on the appropriate type of instruction for particular students. This difference seems to explain why the interaction effects approached significance in the Analysis of Variance.

The last hypothesis stated that there is no difference between scores of students in the two instructional groups from the same background. Tables IX and X reveal the results of those comparisons.

TABLE IX

RESULTS OF THE t-test FOR SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS OF URBAN READING SKILLS STUDENTS AND URBAN STUDY SKILLS STUDENTS

Urban Group Means

	Reading skills group	Study skills group	t	P
Reading Test	5.44	4.36	2.46	.025
GPA	2.22	1.66	11.88	.001
GPA Difference	.1213	- .1436	1.08	.20

TABLE X

RESULTS OF THE t-test FOR SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS OF RURAL READING SKILLS AND RURAL STUDY SKILLS STUDENTS

Rural Group Means

	Reading skills group	Study skills group	t	P
Reading Test	3.55	8.15	2.46	.01
GPA	2.42	2.49	.35	NS
GPA Difference	.2208	.2788	.33	NS

Again there is evidence in Tables IX and X that the effect of a particular type of instruction depends on the background of the students. The Reading test results indicate that while urban students revealed significantly more gain under Reading instruction, the opposite was true for rural students. For them, Study Skills instruction produced a significantly higher test gain.

Also, the grade point average achieved by the urban students in the Reading Skills classes was significantly higher than the average achieved by urban students in the Study Skills class. The difference between actual and predicted grade point averages did not vary significantly under Reading and Study Skills instruction for either background group.

The Dunnet t-statistic used for testing significance of difference between treatment group means where one group is a control group, indicated a significant difference at the .01 level between the experimental group means and the control group mean on all three measures.

Summary

This research reveals a significant difference on all three variables between students receiving reading or study skills instruction, and students receiving no instruction. Also, the analysis of grade point averages and the difference between actual and predicted grade point averages indicate a significant difference in achievement favoring rural over urban students. In comparison of total groups there appeared to be no difference in the effectiveness of the two types of instruction. There is some indication, though, that a real difference does exist and is hidden by grouping students from different backgrounds. Reading instruction appears most profitable for urban students in both test score gain and grade point, while Study Skills instruction seems most profitable for rural students as seen in Reading test score gain only. Also, rural students gained significantly higher grade point averages under Study Skills instruction, but not wide Reading instruction.

A possible interpretation of this difference might be that rural students tend to have better basic reading skill development, and are helped to improve most by attention to organizational and procedural aids in the study skills course. Urban students may be less able to profit from study skills instruction until basic reading skills are made more usable.

It should also be noted that intensive concern for these students by their instructor may well have played as large a role in absolute growth as did any of the particular materials used.

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